

MOAC / Systems Biology
Module CH923
Data, Bioinformatics and Statistics
2007/08

Assignment 3 – Referee a Paper

This coursework requires you to read a paper, and write a report on the statistical content as though you had been asked to referee it by a journal editor (James and Andrew are acting as the Editor for this assignment). Your referee's report is due for submission by **17:00 on Friday December 14, and should be submitted electronically to the MOAC administrator (moac2)**. We anticipate that your review should be no more than 3 pages in length.

You can download a pdf copy of the paper from the "Assignments" sub-page of the module web-page. Included in the pdf are details of how to access the supplementary material associated with paper, that you might also wish to consider as part of your review.

The correspondence from the journal Editorial Assistant is shown below:

Manuscript Title: Multi-species microarrays reveal the effect of sequence divergence on gene expression profiles

Manuscript Authors: Yoav Gilad, Scott Rifkin, Paul Bertone, Mark Gerstein and Kevin P. White

Dear student

Many thanks for agreeing to act as a referee for the above manuscript, recently submitted for publication in The Annals of Genomics. As previously indicated, given your knowledge and expertise in the subject areas upon which this manuscript is focused, the associate editor for the paper has requested that you focus your review on the statistical aspects of the paper. We will be obtaining a separate referee's report from an expert in the biological subject area.

To aid in the preparation of your review, I attach a copy of our instructions for referees.

With best wishes,

Anne Other
Editorial Assistant

Instructions for Referees

The Annals of Genomics is a new journal, focusing on research that provides novel insights into the genome biology of all organisms, including advances in genomic medicine.

Among the topics considered by the journal are genome structure and function, comparative genomics, molecular evolution, genome-scale quantitative and population genetics, proteomics, epigenomics, and systems biology. The journal also features exciting gene discoveries and reports of cutting-edge computational biology and high-throughput methodologies.

General points

1. The paper is a confidential document. Please do not photocopy it or discuss its contents with anyone without first discussing this with the editor.
2. Please type your report on a blank sheet of paper, with a separate letter to me with any specific comments you would not like to share with the authors. Your anonymised report will be sent to the authors. Please make your comments as constructive as possible; we aim to encourage research in genomics and your expert views and comments should be of assistance to the authors in this regard.
3. We would like you to advise us in order to decide whether the paper is:
 - i. of excellent quality;
 - ii. of good quality;
 - iii. of poor quality;
 - iv. not suitable for The Annals of Genomics

and whether it should be:

- a. accepted as is;
- b. accepted with minor modification;
- c. accepted with major modification;
- d. rejected

Instructions

These notes are intended for the use of referees who may not be familiar with the process of peer review; they do reflect the standard of refereeing that we are seeking for our journal.

1. Is the paper well written with a logical flow?
2. Is the aim of the study clearly defined? Is it clear what research question(s) is/are being asked?
3. Are the methods appropriate for the purpose of answering the research question?

In particular:

- i. Are the methods clearly described (in sufficient detail to enable others to repeat the study)?
- ii. Is the research methodology clearly described (including both experimental design and statistical analysis approaches) and sufficiently rigorous for the question(s) being addressed?
- iii. Outcomes – are they appropriate for the research question(s) being addressed?

4. Results:

- i. Are the results clearly written and the tables well laid out?
 - ii. Data should not be duplicated in text, tabular or graphical form. If there is any duplication, please make suggestions for the authors when editing their paper.
 - iii. Are all the figures necessary?
 - iv. Do the figure and table legends provide adequate information to stand alone from the rest of the text?
5. Are the authors' conclusions justified on the basis of the methodology and reported results?
6. We would like to encourage the use of declarative titles which accurately reflect the content of the paper. If the title of this paper could be improved, please suggest alternatives.